Scotland Malawi Partnership

Maternal Health in Malawi: Members' Report

2011 - 2012

Dr. Burnett Lunan, Zoe Clements & Scott Mahony

Authors:

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Acronyms and Abbreviations

ALSO	Advanced Life Support in Obstetrics
AIDS	Acquired Immune Deficiency Syndrome
ARV	Anti-Retroviral
BLSO	Basic Life Support in Obstetrics
CHAM	Christian Health Association of Malawi
CI	Community Intervention
COSECSA	College of Surgeons in East, Central and Southern Africa
DFID	Department for International Development (UK)
ENT	Ear, Nose and Throat
FGD	Focus Group Discussion
GOM	Government of Malawi
HEG	Health Expert Group
HIV	Human Immunodeficiency Virus
KCN	Kamuzu College of Nursing
MCHS	Malawi College of Health Sciences
MDG	Millennium Development Goal
MOH	Ministry of Health (Malawi)
NGO	Non-Governmental Organisation
NHS	National Health Service (UK)
O&G	Obstetrics & Gynaecology
QI	Quality Improvement
RCOG	Royal College of Obstetrics and Gynaecology
RHU	Reproductive Health Unit (Malawi)
RSA	Republic of South Africa
SBA	Skilled Birth Attendant
SBAR	Situation, Background, Assessment, Recommendation
SCHI	Scottish Chikhwawa Health Initiative
TB	Tuberculosis
TBA	Traditional Birth Attendant
UNICEF	United Nations International Children's Emergency Fund
UWS	University of West of Scotland
VLE	Virtual Learning Experience
VSO	Voluntary Service Overseas (UK)
WACS	West African College of Surgeons
WHO	World Health Organisation

CONTENTS

Malawian Forewords

It is widely acknowledged that the strong link between Scotland and Malawi started as far back as the arrival of the first Scottish missionaries, the most famous of whom is Dr David Livingstone in 1858. Since then this relationship has evolved and taken on different guises. For many years this relationship was informal, at church or institution level and has resulted over the years in building of schools, hospitals and even roads. These links, though useful, lacked coordination and suffered often duplication.

The establishment of the Scotland Malawi Partnership (SMP) in 2006 as a coordinating and one-stop information base has resulted in highlighting the importance and value of these partnerships. It also has resulted in the bringing together of people who would previously work in their different silos and not necessarily talk to each other. This is well exemplified by the authors of this paper which includes a specialist doctor, a nurse, an economist and an administrator

This combination provides the paper with a strength that it would not otherwise have had if the authors were from a single field. It also helps to remind us that maternal health is a multifaceted problem that needs interventions from a wide number of fields, not health professionals alone. Indeed our health struggle in Malawi may be traced to the compartmentalisation of the problem and in the provision of clinical services.

This paper highlights the most common factors that affect women's health and result in high maternal mortality. Most of these are nothing new. Indeed Malawi has launched at least 14 maternal initiatives campaigns in the last six years aimed at tackling most of these causes. This paper uses these as a basis for looking at selected Scottish Malawian initiatives that are ongoing and allows the reader to recognise the current coverage of maternal health interventions which includes on the ground projects and online discussion forum.

As someone who has been involved in this partnership for many years, you could say from birth as my given first name is Scottish in origin, I welcome this paper which I believe will have a real impact for the people on the ground. Since the Scotland Malawi Partnership is grounded in community to community and family to family connections, this information will be utilised first at this level and in turn will affect government policy. This is the uniqueness of this partnership; it is resilient to political shocks and builds in sustainability, for friendship requires only a smile to be sustained.

This is the first paper to summarise this subject. I hope that there will be another chance for the authors to revisit this and assess the impact at a later date. I would also like to encourage the SMP office to include the education sector, (educating the girl child) and the financial community (gender economic well being) to weigh in also on this subject.

I congratulate the authors and the SMP for tackling this very difficult subject in simple language in a field fraught with impenetrable jargon that specialist often resort to. Although a single paper cannot deal with all the issues on this subject, this paper will go a long way to providing a rational approach to the problem and moves us further on the road of Scotland and Malawi sharing a common understanding of maternal health. I recommend this paper to all that will follow in the footsteps of Dr David Livingstone to Malawi.

Dr Douglas Komani Lungu
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Malawian Forewords

This report aims to raise awareness of the significance of effective maternal health engagements in Malawi and the importance of Millennium Development Goal 5, which aims at reducing the year 2000 high mortality rates of 1,120 deaths per 100,000 live births by 75% in the year 2015. Malawi and its cooperating partners, through programs such as the Scotland Malawi Partnership, need to put extra effort into the reduction of maternal deaths in Malawi if we are to achieve our goals for 2015.

The high mortality rates in Malawi are due to direct and indirect causes, which can be prevented by timely treatment of the leading causes and hence significantly reducing the maternal mortality rates. It is pleasing to note that the Malawi Scotland Partnerships are implementing a number of maternal health projects, programs and initiatives in Malawi in order to reduce further the maternal mortality rates. The efforts by the Scotland Malawi Partnerships include bringing together stakeholders and practitioners in maternal health for an open and active dialogue. These efforts are highly commendable as there is a need for joint networking in order to avoid duplication of effort as diverse partners work towards maternal mortality reduction. Furthermore, networking is vital to collate information from the Scotland Malawi Partnership membership about contemporary challenges, successes and priorities around maternal health in order to keep all the stakeholders well informed of the progress being achieved.

An assessment of contemporary challenges is also reported in this publication. Factors such as shortage of staff, lack of resources or delays in accessing the health care facilities by pregnant women while in labor, lack of equipment at the health facilities and poorly coordinated heath care system compound the conditions that cause maternal morality. The search for lasting solutions to the problems that cause maternal mortality is therefore a very welcome development and this is the main thrust of the Malawi Scotland Partnership.

I wish to thank the Malawi Government through the Ministry of Health for championing the relevant policies and initiating a number of programs in the reduction of maternal mortality in the country, some of which is the complemented by links made through the Scotland Malawi Partnership.

Dr. Address Malata, Principal,
Kamuzu College of Nursing and
President of the Association of Malawian Midwives (AMAMI).

Scottish Foreword

A prominent feature of the history shared between Scotland and Malawi is concern to promote good health. David Livingstone, the first Scot to be welcomed to Malawi when he visited in 1859, was a medical doctor. Many of those who followed in his footsteps shared the same profession. Many of the first Malawians to participate in the practice of modern medicine undertook their training at the Scottish mission hospitals. After Malawi gained independence in 1964, her first generations of medical students undertook their pre-clinical education in Scotland. As with so much else in the Partnership, the depth of history in the background lends quality and maturity to the engagement.

To talk health in the context of Scotland and Malawi, however, is less about recalling a long history and more about engaging urgent contemporary challenges. Outstanding amongst these is the issue of maternal health. In 2000, the United Nations adopted the Millennium Development Goals, including No. 5: "Improve maternal health", specifically "Target 5A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio; Target 5B: Achieve, by 2015, universal access to reproductive health". This has proved to be one of the MDGs which has been hardest to attain. Malawi is one of the countries with a stubbornly high maternal mortality rate. It would therefore be hard to think of a more strategic contribution to the fulfilment of the MDGs than to find ways of strengthening efforts to improve maternal health in Malawi. This was recognised in the inter-Governmental Cooperation Agreement between Scotland and Malawi which was signed in 2005.

Both from partners in Malawi and from its own members working in this field, the Health Committee of the Scotland Malawi Partnership learned that there was pressing need for a pooling of knowledge, experience, expertise and critique. The result, now compiled in the form of this report, shows the SMP at its best. It has brought together leading practitioners both from Malawi and from Scotland and, using the innovative technology of a Ning internet forum, enabled them to collaborate on identifying factors which are blocking improvement to maternal health, forming strategies to overcome the obstacles and strengthening each other to meet the challenges through greater shared understanding and combined effort.

The Partnership is therefore delighted to reach the stage of publishing the findings of this project. We do so with grateful thanks to Dr Burnett Lunan, chair of the Health Expert Group, and to all who have collaborated so willingly and sacrificially in the work undertaken. Our hope is that the report will become a key reference point for those working in this field and that it will play its part in achieving a steady but sure reduction in the level of maternal mortality prevailing in Malawi.

Rev Prof Kenneth Ross,
Chairman, Scotland Malawi Partnership

Section 1: Introduction:

1.1 The Scotland Malawi Partnership

The Scotland Malawi Partnership (SMP) is an umbrella organisation which exists to inspire the people and organisations of Scotland to be involved with Malawi in an informed, coordinated and effective way to the benefit of both nations.

The Partnership provides a forum where ideas, activities and information can be shared on its website, through its online mapping tool and its regular workshops, training events and stakeholder meetings. By creating a single space for all the organisations and individuals in Scotland currently engaged with Malawi to come together, the SMP helps reduce duplication of effort, adds value to Scotland's historic civil society relationship with Malawi, and contributes towards poverty alleviation in Malawi.

The Partnership has over 490 member organisations and individuals, all of whom have their own Malawi work/connections. It also engages around 150 key Malawians in Scotland and about 250 Malawian organisations and individuals with Scottish links in Malawi. The Partnership facilitates a Cross Party Group on Malawi in the Scottish Parliament, works closely with (and is kindly core-funded by) the Scottish Government, and is starting to work with all 32 Scottish Local Authorities.

The SMP is underpinned by a historic bilateral civil society relationship based not on 'donors' and 'recipients' but on long-standing, mutually-beneficial community to community, family to family and people to people links. It is a relationship built on trust and mutual respect. This is a new and innovative mode of international development and it is a powerful force for change.

In November 2010 the University of Edinburgh published its report 'Valuing Scotland's links with Malawi', which found that:

- The value of inputs (money, time and in-kind donations) made by the membership of the SMP to Scotland's links with Malawi is at least £30 million a year.
- Every year at least 1.3 million Malawians (roughly 10% of the total population) and 280,000 Scots benefit from this activity.
- Approximately 148,000 Malawians and 85,000 Scots are actively involved in delivering these activities.

1.2 This paper

In 2010 the SMP set up a new Health Expert Group (HEG): a time-limited and outcomes-based group focusing specifically on one area of health or specialty for approximately a year with a rotating chair. The topic for 2010 was Maternal Health. The exercise involved ascertaining what work was being carried out by SMP-affiliated groups, how it was done and how people overcame the barriers that they were faced with. The aim was to enhance partnership working, reduce duplication and promote and share positive practice.

This HEG has been chaired by Dr Burnettt Lunan, a retired Obstetric & Gynaecology Consultant with experience in Malawi and Bangladesh, and the paper has been written by Dr Lunan, Zoë Clements of Queen Margaret University and Scott Mahony.

Whilst it is recognised and acknowledged that there are a myriad of issues connected and interrelated with maternal health, this paper cannot address all of these in great depth; therefore it will focus on the issues raised by members of the SMP and the current work being undertaken by them. The major issues currently being raised are: lack of resources and healthcare systems, limited access to services, and the role of skilled attendants at birth and gender equality.
When the Health Committee of the SMP chose maternal health as its first major topic for examination it was decided to look at it under three broad headings: Human Resources, Quality Assurance and Health Determinants. Although these were helpful groupings from an analytical perspective, the fact that groups' interests frequently overlapped the categories meant demarcating work into these three silos became problematic.

Another factor has been the 'busy-ness' of many contacts, limiting the time available to report on activities or respond to enquiries. However the success of the 'Ning' web-interface has helped facilitate the exchange of ideas and information. The HEG was very keen for its work to include, indeed to be based around, input from Malawian health experts, as well as their Scottish counterparts. Accordingly, key Malawian healthcare professionals were targeted and their input was greatly valued in developing this project and writing this paper. It goes without saying that these Malawian individuals, perhaps even more than their Scottish counterparts, are extremely busy and hence it was essential that this process did not become yet another burden impeding their work on the ground. We are acutely aware that working conditions in the two countries are very different and that it is very difficult to deal with a constant stream of initiatives and 'improvements' from a range of countries world-wide. We appreciate these problems and seek to support our colleagues in Malawi in every way possible. It is hoped that, as this paper continues to evolve through successive revisions, more Malawians will become involved, on their own terms, giving their unique insight into the challenges on the ground and the most locally appropriate solutions.

The 2010 HEG, and this paper, have six objectives:

1. To raise awareness of the significance of effective maternal health activities in Malawi, and the importance of Millennium Development Goal 5.
2. To bring together stakeholders and practitioners engaged in Scotland-Malawi maternal health engagements, facilitating an open and active dialogue between stakeholders.
3. To raise awareness of the different maternal health projects, programmes and initiatives taking place in Malawi, encouraging joint-working and reducing duplication of effort.
4. To collate information from the SMP membership, and from our partners in Malawi, about the contemporary challenges, successes and priorities around maternal health in Malawi.
5. To look for sustainable solutions to common problems regarding maternal health engagements and to agree a handful of related best practice recommendations.
6. To facilitate and strengthen continued maternal health work between Scotland and Malawi.

Section 2 of this paper is largely composed of the research undertaken by Zoë Clements for the SMP, as part of her MSc in Social Development and International Health, which looks at the conceptual framework for maternal health engagements, assesses the Malawian context and reviews existing conclusions regarding the impediments to maternal health in Malawi and elsewhere in the developing world.

Section 3, compiled by Dr Lunan, consists of nine cameos - summaries of existing Scottish maternal health initiatives operational in Malawi. Contact details are given for each of these projects and it is hoped that this will help raise awareness of existing work, promote more joint-working and shared learning, and reduce duplication of effort.

Section 4 details what the SMP has done, through the HEG, over the last year to bring together the views and opinions of a large number of organisations and individuals with experience and clinical expertise in this field. In this section Scott Mahony outlines how an online discussion has been facilitated through Ning and Zoe Clements details the research undertaken by herself and Dr Lunan. Space is given in Section 4.3 for a collation of the key 'challenges' and 'successes' submitted by the nine organisations detailed in Section 3, as part of their project abstracts, in advance of the February 2011 stakeholder discussion forum. Section 4.4 then details the outcome of this face-to-face discussion in February 2011, highlighting the areas of general consensus.

In Section 5, Dr Lunan brings together the various strands of research to present an analysis of existing efforts, between Scotland and Malawi, to address the core challenges which effective maternal health engagements face. Then in Section 6 Dr Lunan highlights some of the key barriers to success which continue to slow progress in this field.

Finally, Section 7 presents a 'way forward'; not from any unique insight from within the SMP, but as an outcome of the HEG discussions, the research amongst SMP members and clinical experts, and the open stakeholder discussion forum – all of which has enjoyed, and benefited from, broad-based participation.

2. Maternal Health: a global challenge

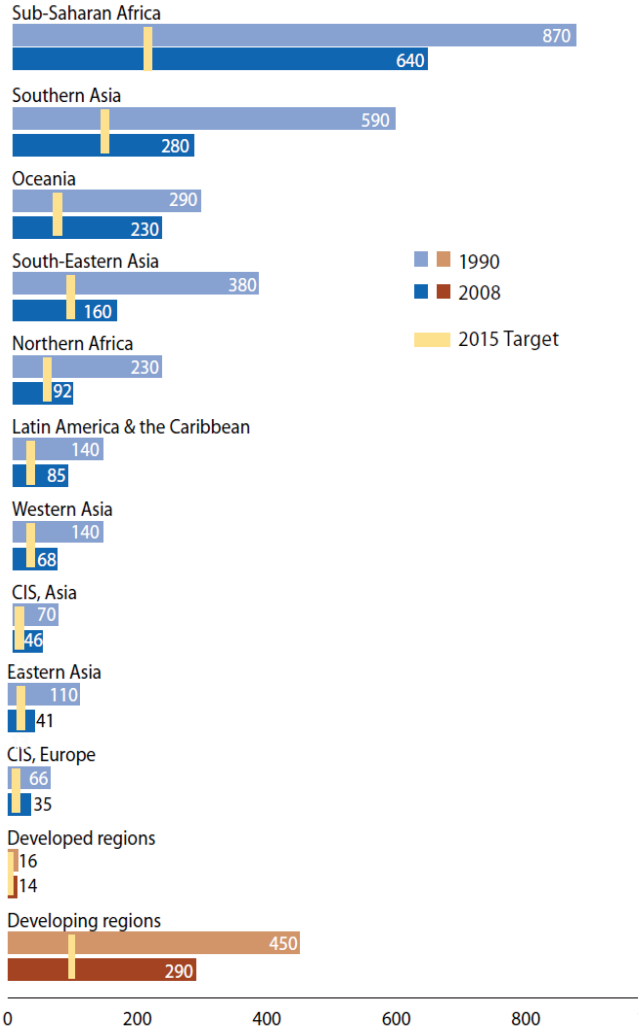
2.1 Why maternal health?

For a variety of reasons, maternal health remains an essential development priority in Malawi and for much of the developing world. Pregnancy and procreation are entirely normal and natural processes, they are not diseases or afflictions, yet distressingly high incidences of maternal mortality remain an accepted part of life in much of the developing world (see Box 2.1).

These deaths, many of which are preventable, impact women who are not only childbearing but are also often the mainstays within a family, with responsibilities to care for the young and old as well as undertaking the role of breadwinners and educators of children (WHO 1999).
According to the WHO, newborn survival is closely linked to maternal health and survival. If a mother dies the chance of the neonate also dying is highly correlated. It is clear that a lack of maternal care is responsible for a large number of deaths or disabilities amongst these infants. The WHO (2008a) estimates that each year three million babies die due to maternal death and complications, such as through obstructed labour, eclampsia and infections such as syphilis. McConville et al (2010) estimate that of the four million babies a year who die in infancy, 70% are born to mothers who died during child birth, and with many more becoming malnourished.

Older children also suffer negative consequences if their mothers die as a result of a pregnancy. Children up to the age of ten years are ten times more likely to die within two years of their mother's death. Furthermore, when a mother dies there is also a reduction in household income. The effects of this can lead to children discontinuing their education, either because of a lack of income or to take care of younger siblings (McConville 2010).
The effects of maternal mortality are far-reaching. Many are left with permanent disability and damage which impacts their ability to undertake social and economic responsibilities and share the development of their communities.

Box 2.1: Maternal mortality: deaths per 100,000 live (1990 and 2008)



Source: United Nations, The Millennium Goal Report, 2010, Appendum 2

The global disparities in rates of maternal mortality are stark. Whilst childbearing in the developed world is safer than it has ever been, over half a million women will die each year from pregnancy-related causes, almost all of these in lower income countries (Doyal 1995). Of the 536,000 maternal deaths globally in 2005, it is estimated that 533,000 occurred in developing countries (WHO 2007).

Alongside the high fertility rates within the region, the likelihood of dying from a pregnancy-related condition is far higher in Africa than in other parts of the world. The lifetime risk of a woman dying of a pregnancy related issue is highest in the continent of Africa, at 1 in 26 (based on the probability of a 15 yr old female dying of a maternal cause) (WHO 2005). In Niger women have a 1 in 7 life time risk of dying from a pregnancy related complication, significantly higher, for example, in comparison to Ireland where it is 1 in 48,000 (WHO 2008a).

Underlying issues, such as women's low social and economic status, limited access to education and good nutrition, excessive physical labour and lack of decision-making within the family, all impact on maternal health. As a result, when looking to address the issues pertaining to maternal mortality, many areas need to be considered. Health, social, and economic interventions are most efficient when implemented concurrently.

Such high rates of maternal mortality have a devastating impact on society as a whole. As the World Health Organisation reflect, 'a society that is deprived of the contribution made by women is one that will see its social and economic life decline, its culture impoverished and its potential for development severely limited (WHO 1999).'
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2.2 Attempts at global solutions

There have been several initiatives, conferences and international agreements addressing the issue of maternal mortality in the past 25 years, including:

- 1987 International Safe Motherhood Conference, Nairobi
- 1990 World Summit for Children, New York
- 1994 International Conference on Population and Development, Cairo
- 1995 4th World Conference on Women, Beijing
- 1997 Technical Consultation 10th Anniversary of Safe Motherhood Initiative, Sri Lanka
- 2000 Millennium Summit: world leaders ratified the Millennium Development Goals, New York (see Box 2.2)
- 2001 Global Health Council Annual Meeting focusing on maternal health, Healthy Women: Healthy World Challenges for the Future, Washington D.C.
- 2010 African Union Summit on Maternal, Infant and Child Health and Development, Kampala
- 2010 Global Maternal Health Conference , New Delhi

One of the most significant global initiatives was the ratification of the Millennium Development Goals. In particular, Millennium Development Goal (MDG) 5 commits to reducing the global maternal deaths by three quarters between 1990 and 2015 and to achieve universal access to reproductive health services by 2015 (see Box 2.2). This is proving, to be the hardest MDG to achieve. By 2005 figures already indicated that it was unlikely these targets would be met, and in fact that there will not be a notable significant reduction in maternal mortality. The global maternal mortality ratio was 430/100,000 in 1990. By 2008 the number remained above 300/100,000 - a reduction of less than 1% (WHO 2008b). To enable the MDG to be achieved a 5.5% reduction in maternal deaths is required annually (WHO 2007). Other initiatives are also currently trying to highlight and reduce the high rates of maternal mortality. The White Ribbon Alliance is an international grassroots organisation promoting issues related to maternal mortality using politicians to keep the topic high on the political agenda, as well as highlighting the issue amongst the general population and providing education to many.

Box 2.2: Millennium Development Goal 5: Maternal Health

Target 5.A: Reduce by three quarters the maternal mortality ratio

- Most maternal deaths could be avoided
- Giving birth is especially risky in Southern Asia and sub-Saharan Africa, where most women deliver without skilled care
- The rural-urban gap in skilled care during childbirth has narrowed

Target 5.B: Achieve universal access to reproductive health

- More women are receiving antenatal care
- Inequalities in care during pregnancy are striking
- Only one in three rural women in developing regions receive the recommended care during pregnancy
- Progress has stalled in reducing the number of teenage pregnancies, putting more young mothers at risk
- Poverty and lack of education perpetuate high adolescent birth rates
- Progress in expanding the use of contraceptives by women has slowed
- Use of contraception is lowest among the poorest women and those with no education
- Inadequate funding for family planning is a major failure in fulfilling commitments to improving women's reproductive health

2.3 The Malawian context

Malawi is a landlocked country in Central Africa bordered by Mozambique, Tanzania and Zambia. It has a population of just over 13 million, 83% of which live in rural areas (Road Map 2005). Malawi is one of the 14 countries globally with the highest maternal mortality ratios (Amnesty International 2009).

Box 2.3 The Malawian context

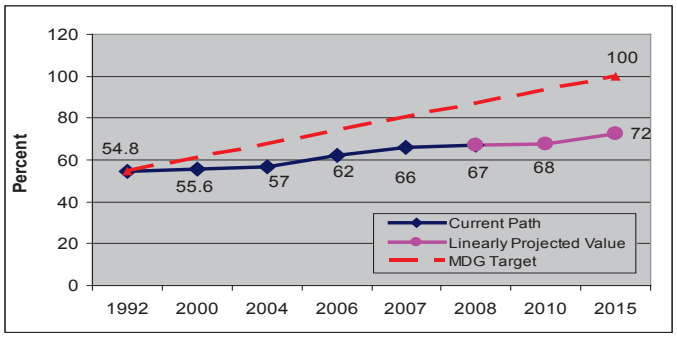
- GNI per Capita (US$): 290
- Percentage of population below poverty line: 73%
- Life Expectancy (at Birth): 53 years
- Population under 18: 7,900,000
- Total Fertility Rate: 5.5

Source: UNICEF Country Info 2008

In 2005 Malawi made maternal health a key strategy, aiming to provide a more comprehensive approach to reduce maternal mortality through the 'Road Map Strategy' (2005). This policy recognised that many factors contribute to the high levels of maternal mortality and morbidity within the country, such as poor access to services, poor utilisation of emergency obstetric care and poor quality health care services.

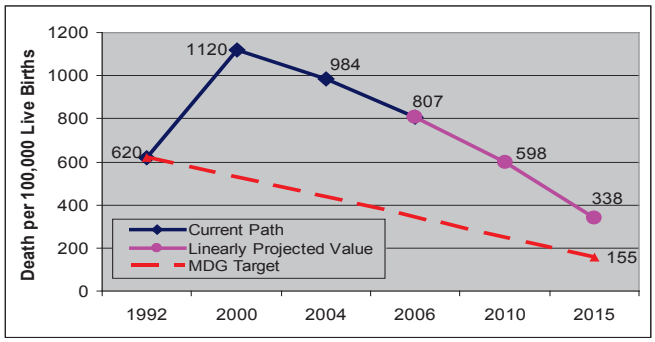
There is a great emphasis in Malawi on the critical need for quality and affordable healthcare, as a matter of securing livelihoods and survival (Narayan et al 2000). In Malawi all groups within society regard accessible, effective and affordable healthcare as a priority throughout one's life, this is of particular concern for women throughout their pregnancy and in childbirth. However, as with many developing countries, accurately gauging progress towards achieving the MDGs in Malawi is problematic due to limitations in data collection. Currently the official source of maternal health statistics in Malawi, the Malawian Demographic and Health Survey (MDHS), is only collected every five years, with the latest round yet to be published. Using available data, The Government of Malawi's '2008 Millennium Development Goals Report' states that, since 1992, the proportion of births attended by skilled health personnel has seen a modest rise (see Box 2.3.2), and, since 2000, there has been a significant decrease in maternal mortality rates (see Box 2.3.3). Both the GOM and the United Nations Population Fund predict this trend to continue into the future; however, not at a fast enough rate to achieve the targeted reduction of three quarters by 2015. While there has been a concerted effort to address maternal mortality in Malawi in line with MDG 5, recent data suggests there is still room for further progress

Box 2.3.2: Proportion of births attended by skilled personnel



Source: 2009 Malawi MDGs Report (Malawian Demographic and Health Study 1992, 2000, 2004 and WMS 2006, 2007, 2008)

Box 2.3.3: Maternal mortality ratio



Source: 2009 Malawi MDGs Report (Malawian Demographic and Health Study 1992, 2000, 2004, MICS 2006)

2.4 Impediments to maternal health: a literature review

There has been a significant quantity of written work focusing on the causes of maternal mortality in the developing world, and an increasing body of Malawi-specific literature on the topic. This sub-section highlights four key impediments to maternal health (poor transport and accessibility, lack of resources and staff, local and cultural barriers, and a shortage of skilled birth attendants), highlighting existing literature, areas of general consensus and widely held conclusions in each of these areas.

It must first be noted that there are both direct and indirect causes of maternal mortality. Direct causes include: sepsis, obstructed labour, ruptured uterus, haemorrhage, eclampsia and unsafe abortion (Ratsma & Malongo 2009). Indirect causes include conditions which are aggravated by pregnancy and may have been present prior to its commencement, such as malaria, HIV and diabetes (Tsui et al 1997).

Both direct and indirect causes of maternal mortality are further impacted by issues such as a lack of health care staff, lack of resources, and poor nutrition. This paper specifically focuses on issues around the shortage of staff, accessibility to services, lack of equipment and healthcare systems, as well as cultural and local factors.

Whilst mortality figures are high, there is also a need to consider the morbidity rate. The WHO suggests that for every maternal death there are 30 women experiencing serious consequences or disability as a result of pregnancy or delivery (2009). Long term disabilities include obstetric fistula, prolapse, severe anaemia, pelvic inflammatory disease, reproductive tract infections and infertility (Tsui et al 1997). The actual numbers of people exhibiting these conditions are difficult to ascertain as they are reliant on self-reporting, and many of these conditions are associated with stigma and shame and so often go untreated. Many women suffer from conditions aggravated by pregnancy which then indirectly lead to death or further disability for the mother or her newborn child. Complications in pregnancy, even if non-fatal, often still have a significant negative impact on the woman's quality of life, fertility and productivity.

2.4.1 Poor transport and accessibility

According to Ratsma & Malongo (2009) the main direct causes of maternal death are puerperal sepsis, obstructed labour, ruptured uterus, haemorrhage, eclampsia and unsafe abortion. It is estimated that approximately 74% of maternal deaths could be prevented however if all women had access to services which would prevent or treat such complications associated with pregnancy and birth. It is therefore clear that access to, and provision of, emergency obstetric care, family planning services and ante-natal and post-natal care are key determinants of maternal health (Amnesty International 2009).
Alongside the issue of high pregnancy-related mortality in developing countries, there is also a lack of general medical facilities, with available facilities being clustered in urban areas. This makes the situation worse for those living in rural communities (Thaddeus & Maine 1994). Royston & Armstrong (1989) note that they found a slightly lower rate of maternal deaths occurring within urban areas.

The geographical location of services has a direct impact on attendance for several reasons. According to Thaddeus and Maine (1994) there is a disincentive to attend due to the long distance required to travel, availability of affordable transport and the condition of the roads. Geubbels (2006) says that there is a "distance decay curve", which means that the further a patient lives from a health facility, the less likely they are to utilise its services.

In this context the principle impediments to accessibility are transport and cost. Narayan et al (2000) suggest travel distance is the single biggest obstacle, more so even than cost. While Tsui et al (1997) insist that, whilst transportation can be a major obstacle to seeking healthcare, cost and poor perception of care are more likely to reduce attendance.

In many developing countries it is often not the women who are the principal decision-makers regarding whether to travel for healthcare, but rather the husband or other 'senior' members of the family. Often the decision will be imposed on the women not to travel, or to travel only to the most local clinic which may only be able to deal with very minor difficulties in pregnancy (Thaddeus & Maine 1997).

Thaddeus & Maine (1994) have devised a model considering the myriad of reasons surrounding the issues of accessing timely healthcare and the many barriers pregnant and labouring mothers face. Their 'Three Phases of Delay Model' is broken into discrete areas:
1) Delay in deciding to seek care (individual, family, or both)
2) Delay in reaching an adequate healthcare facility
3) Delay in receiving adequate care at the healthcare facility.

The first delay is dependent on who the principal decision-maker is, the symptoms, cost, distance, previous experience of the healthcare system, or perception of the quality of care. Here socioeconomic and cultural factors play alongside issues of accessibility of facilities and quality of care.

The second delay is more closely associated with the physical accessibility of services. Factors include: the distribution of services, travel time from home to the facility, availability and cost of transport, and conditions of roads.

The final phase involves effective referral systems; shortage of supplies, equipment and trained staff; and the competency of those staff. This is usually dependent on the perception of quality of care.

As the literature demonstrates poor transport, and associated costs, as well as socio-cultural factors are highly correlated with women hesitance to access maternal health services

2.4.2 Lack of resources and staff

Kafulafula et al (2005) offer an alternative perspective on the determinants of maternal mortality. They suggest that the main reasons for high maternal mortality rate are: the HIV/AIDS pandemic; shortages of staff (primarily nurses and midwives); lack of resources such as medical supplies and equipment, drugs and linen; the disparity between genders; and strong cultural beliefs.

Kafulafula et al (2005) discuss the impact of poor working conditions and the high client to midwife ratios which exist in Malawi, and how this influences midwives' decisions to seek work elsewhere, usually outwith the Malawi government health sector. Some will leave the country entirely whilst others will work in private hospitals or with other international organisations within the country where they are offered more desirable working conditions. This not only has a direct negative impact on the quality of care for women and their babies, it also creates a poorer environment for those who remain, especially as it creates a lack of more experienced staff for juniors to learn from.

Kafulafula et al (2005) also discuss the impact that HIV/AIDS has had on staffing levels, given that so many healthcare professionals have become infected with the virus and have subsequently died. Kafulafula et al (2005) recommend the training of more midwives in existing colleges and also opening new ones; introducing a better salary structure and career progression ladders for midwives; and considering a scholarship programme whereby newly qualified midwives are required to work for a minimum period within the public sector before being able to move on to other posts (2005).

2.4.3 Local and cultural barriers

A review of the literature also suggests that local and culture barriers determine the health outcome of pregnant women. Traditional treatments continue to offer many in the developing world an alluring alternative to conventional healthcare services. Such treatments are usually found closer to home and hence they are easier to access, not needing long journeys with the associated loss of earnings associated with being away. Also, such traditional alternatives, whilst they usually still require some payment, can usually be paid for in kind, such as with livestock or in installments at a later date (Narayan et al 2000). Cultural suspicions can further impact on women's course of action. Geubbels (2006) notes that in some regions it is believed that if the women 'reveals' the commencement of labour (for example, by making the journey to hospital) this will attract the attention of evil spirits who may bring harm to the mother and child. This can be a powerful cultural disincentive to travel. In many countries obstructed labour is viewed as an indicator of infidelity on the part of the woman (Tsui 1997); this results in delayed presentations to healthcare facilities and potentially ending in mortality or permanent disability.

Thaddeus & Maine (1994) also discuss the shame and potential rejection by husbands, families and communities when sexually transmitted diseases, vesicovaginal fistula or complications from unsafe abortion occur, and which are therefore not acknowledged or treated. Fear, shame and desperation continue to also push many women in lower income countries to seek unsafe abortions, resulting in death or disability.

Royston & Armstrong (1989) discuss how women actively avoid attending the local clinic as they know if there is a problem they will have to make a long journey to a hospital in a city environment, with which they are unfamiliar and where they feel staff may make them look backwards and ignorant.

In some cultures, childbearing is a method for women to gain status, pride and prestige - even in cultures where they may have financial independence. In other cultures a stoic demeanor throughout labour and not calling for assistance can bring honour to the woman and her family. This all impacts the decision-making process, dissuading women from choosing to access appropriate care in the first instance (Thaddeus & Maine 1997).

2.4.4 Shortage of Skilled Birth Attendants

MDG 5 sets a target that, by 2015, 90% of all births will be attended by a skilled practitioner. This is both extremely ambitious and rather vague, for there is little consensus on what defines a "Skilled Birth Attendant" (WHO 2007).
Kablinsky et al (2006) note that there has, on a global scale, been some slow progress towards professional attendance at all births. In 1992, they note, across a household survey covering approximately 40 developing countries, 40% of births were attended by a professional (doctors, midwives, nurses or trained traditional birth attendants). By 2000 this had risen to 50%. There was also a comparable rise in the proportion of births occurring in a medical facility.

However, many women still remain without care of any kind and give birth either on their own or with only a relative or neighbour to assist. The issue remains especially acute in rural areas, with only 32% of rural women having a trained attendant at birth (Kablinsky et al 2006). This figure has not improved since the 1990s.

Malawi has an acute shortage of appropriate resources, equipment, facilities and staff, with many births conducted by Traditional Birth Attendants (TBAs) – most typically women who have very limited clinical skills but live locally and are known and trusted within their community. TBAs, as has been noted, can usually be paid for in a variety of ways, not just financially. However, there has been a lot of speculation and contention about the cost and effectiveness of training programmes for these birth attendants. As a result, in 2007, the Malawian Government agreed and implemented a ban on all TBAs, arguing that the traditional attendees were unable to identify obstetric emergency cases early enough.

The Government of Malawi had hoped that mothers, who would have used TBAs, would then use central healthcare facilities to give birth. However, reports suggest that since the ban around 50% of all births are still not taking place within medical facilities, and that, as these TBA practitioners have "disappeared", statistics regarding births and deaths in the most rural areas are now simply not being recorded (IRIN News 2010). The ban on TBAs has recently been relaxed, though there remains some uncertainty about the Ministry of Health 's position.

Costello et al (2004) argue strongly for community-based interventions, suggesting a collaborative approach to work with TBAs. They argue that there is a lack of evidence to suggest that TBAs are to blame for the ongoing high maternal mortality figures in various parts of the world. They also suggest that TBAs, who are usually located within communities and are often sought by people for advice, are in a key position to run community training/outreach programmes to promote reproductive services, hygiene, and delay avoidance in seeking healthcare.

As a country develops, the numbers of nurses, midwives and doctors able to attend births (and identify complications) increases and the need for TBAs is significantly reduced. However, this is a gradual process which takes time and significant resources. Using China as a case study (where the Maternal Mortality Ratio was reduced to 120/100,000, in part, through the use of TBAs), Costello (2004) argues that until this tipping point in development is reached, TBAs will remain an important tool in reducing maternal mortality.

Section 3: Existing Scotland-Malawi maternal health engagements: Dr Burnett Lunan

This section, compiled by research undertaken by Dr Burnett Lunan, includes cameos from nine members of the Scotland Malawi Partnership. It is hoped that, by including project summaries (including contact details) of existing operations, this paper will raise awareness, facilitate the sharing of expertise, promote joint-working and help reduce duplication of effort.

3.1 Advanced Life Support in Obstetrics (ALSO) in Scotland

The single most important Scottish contribution to maternal health has been in the training of clinicians –doctors, clinical officers, midwives and nurses– in dealing with obstetric emergencies.

In 2004 the Scottish franchise of ALSO (Advanced Life Support in Obstetrics) decided to fundraise to take training courses to Malawi where very high maternal mortality was prevalent. The Scottish Government, or Executive as it then was then, decided to support the ALSO programme in 2005 for three years, which was extended for another year into 2009. The content of the course is evidence-based, highly practical, and interactive, and participants were very enthusiastic. However there were challenges - candidates had not read the manual in advance of the course, and the format of multiple-choice questionnaires was unfamiliar.

It was also recognised that some assumptions in the course about access to equipment and drugs, and about experience of the participants, did not reflect conditions in Malawi. But to lower standards or dilute the teaching was not acceptable for an internationally recognised course. Acknowledging this, the American Association of Family Physicians, the parent body of ALSO, have developed a one-day course in Basic Life Support in Obstetrics. The Scottish teams were responsible for piloting this programme in Malawi.

The initial assessment was positive and further refinements of the course are continuing. However the Director of the Reproductive Health Unit has opted to endorse a locally developed Basic Emergency Obstetric Course for which he is seeking international support.

In total, 1,238 candidates have attended ALSO courses, in addition to 56 candidates on BLSO courses and 95 candidates on the one day Emergency Skills Seminars. Outstanding candidates on the ALSO Courses have undergone training to become ALSO Instructors and have played an increasing role in the running of the courses. There has, however, been a huge input in training large numbers of clinicians to deal with emergency situations and providing local trainers enables these skills to be disseminated widely.

It is disappointing that the ALSO course, especially the BLSO course recently developed, will not be adopted in the foreseeable future but it is hoped that the leadership/teaching skills identified in the Malawi-based ALSO Instructors will ensure that locally developed courses are relevant, well supported and implemented .
For further information contact Noreen Kent (noreen.kent@btinternet.com)

3.2 The University of Edinburgh

Edinburgh University is involved in medical and nursing undergraduate and post graduate education – developing digital content creation skills of medical, nursing and heath science educators using interactive programmes (VLE – Virtual Learning Experience) and establishing a new Ciriiruclum management system supported by a new purpose built IT platform and server. Over 400 university clinical training resources have been shared and built Interactive resources for independent learning and testing of knowledge and skills in Maternal Health is planned to be the next module in the programme. Doctors, Clinical officers and nurses/midwives are all involved in the training programme.

The use of such teaching programmes is critical if the anticipated increase in medical and midwifery students is to be catered for with limited personnel and facilities.
For further information contact Neil Turner (neil.turner@ed.ac.uk)

3.3 Nkhoma Safe Motherhood Project

In 2009 the Nkhoma Safe Motherhood Project was launched. The objective was to: improve awareness of maternal health; empower pregnant women; train TBAs to improve quality of referrals; improve transport when required; improve communications between health centres and hospital; and improve quality of care and specifically maternal health provision at the health centre level.

Baseline measurement of the maternal mortality ratio is difficult because of underreporting of births and deaths (especially early in pregnancy). It is estimated that surveillance captured less than 25% of birth events.

In the project's Pilot Study non-fatal complications were reduced, more women attended ante-natally and more women were assisted in delivery by skilled birth attendants. A need for Guardian Shelters (where family members can stay and prepare meals) has been identified by the community and plans are in hand to construct such a shelter with local funding in support.

This project, though modest in the numbers served, is ambitious in its scope and has demonstrated that, with community motivation and support, more women will attend for care and seek skilled birth attendants at their deliveries.
For further information contact Jennie Chinembiri (jchinembiri@cofscotland.org.uk)

3.4 St Andrews University

St Andrews University is primarily involved in 'pre-clinical' training, with Malawian students but is also reviewing the entire medical curriculum in conjunction with Edinburgh University

There is a heavy input into computer technology and setting up a 'big server' plus fibre-optic cabling with Edinburgh University resources. Access to St Andrews University Library has been established, reducing the dependence on textbooks and enabling students to pursue their timetable at their own pace. There are also plans to empower students through Staff/Student Councils and to encourage 'standard setting', though these concepts are new to campus life in Malawi.

While there is little direct impact on maternal health, more well trained young doctors, nurse/midwives and clinical officers will eventually result in better care for pregnant women.
For further information contact Simon Guild (sbg@st-andrews.ac.uk)

3.5 Scotland Chikhwawa Health Initiative (SCHI) University of Strathclyde

The Division of Environmental Health at the University of Strathclyde has been working with the University of Malawi and the Chikhwawa District Health Office in Southern Malawi since 1997. Initially the focus was on water, sanitation, and hygiene in communities and schools, and was mainly research-based. In 2006, with funding from the Scottish Government International Development Fund, the SCHI focused on holistic community health, including the role of the TBAs, in improving maternal health. During the course of the project the role of the TBAs changed, following advice from UNICEF/WHO, from delivering women to identifying pregnant women and ensuring their referral to skilled birth attendants. A programme to adapt to their new role has been developed by SCHI and the local District Health Office in Chikhwawa.

The latest programme (2010-13) in conjunction with KCN is designed to target access to health facilities and community education in remote rural areas. The role of community health nurses in maternal and neonatal healthcare is also being developed. The three major facets of this project are: improvement in facilities, sanitation, communication and equipment for deliveries; training of staff at all levels; and engaging with local leaders of village groups to effect these changes.

The project not only concentrates on maternal health services alone but also addresses family planning, prevention of mother to child transmission of HIV, the use of mosquito nets and household water treatment. SCHI

works in partnership with other local NGOs including Management Services for Health (MISH), Centre for Victimised Women and Orphaned Children (CAVWOC) and the Hunger Project.
Further information about the SCHI from Tracy Morse (tracythomson@africa-online.net)

3.6 Scotland Malawi Anesthesia

Since 2006, under leadership from staff at Ninewells Hospital, Dundee, 34 courses have been delivered in Malawi, mainly to clinical officers. The courses have covered paediatric, obstetric, and emergency anaesthesia; advanced life support; and intensive care medicine. On all courses there have been sessions on communication skills (using SBAR - Situation Background Assessment Recommendation) and morbidity/mortality case discussions. Some midwives and nurses from High Dependency Units have also attended. Although the practical skill of the clinical officers is limited, many were keen to learn and a number have been trained as trainers. The Malawian trainers have approached their challenge with enthusiasm and their teaching and knowledge skills have improved year on year, under mentorship from the Scottish faculty.

The Scottish faculty has included anaesthetists, intensivists, emergency medicine consultants, resuscitation training officers and educationalists from across Scotland. Safe anaesthesia is imperative for safe surgery. In most health facilities in Malawi clinical officers provide anaesthetic services and improving their skills is therefore critical. Emergency obstetrics requires timely skilled anaesthetic input; therefore the training of clinical officers in this particular area should contribute to safer childbirth.

Funding for this programme has been raised by local effort and by support from Tayside NHS Health Board, Forth Valley NHS Health Board, the Scottish Society of Anaesthetists, the Scottish Intensive Care Society, the Scottish Government Humanitarian Health Fund, Edinburgh Anaesthetics Research and Education Fund, NHS Education for Scotland, the Scottish Multi-disciplinary Maternity development Group, the Association of Anaesthetists of GB & I, the Royal College of Anaesthetists, the Obstetric Anaesthesia Association, the Advanced Life Support Group and the National Institute of Academic Anaesthesia (UK).
For further information contact Catriona Connolly (c.connolly@doctors.org.uk)

3.7 Waverley Care

Waverley Care is a Scottish based charity involved in providing care, education and support for people infected with HIV in Scotland and Malawi. Their programme in Malawi also looks at wider aspects of sexual health to minimise risk of infection and unwanted pregnancy. Because resort to unsafe abortion is common, with significant impact on maternal mortality, prevention of such pregnancies can only help. Also pregnancy is more hazardous with HIV infection for mother and baby so preventing the spread of HIV, treatment during pregnancy and avoidance of mother-to-baby transmission benefit mother and baby.

Where the programme has been well implemented a positive impact has been achieved, but success is very dependent on the commitment of local partners.
For further information contact Jonathan Creel (0131 441 6989) or (manager@waverleycare.org)

3.8 University of the West of Scotland

Prior to becoming part of the University of the West of Scotland (UWS), Bell College was a partner in providing bursaries for nursing students in Kamuzu College of Nursing and two training facilities at Kamuzu College – in 2000, a post natal clinic jointly with the University of Strathclyde as a Millennium celebration of David Livingstone; and in 2004 a peri-natal training unit jointly funded by Strathclyde University, Glasgow Lord Provost's fund, and Bell College. Both clinics provide in situ training for nurses and midwives and accommodation for pregnant women but if complications arise the woman has to transfer to another facility. Further, in 2005, and jointly with Scottish & Southern Energy, Bell College and Blantyre Polytechnic, Bell College rolled out a fully fitted solar and wind-powered clinic in rural Malawi, which previously had no electricity. This allowed the storage of drugs and use of monitoring equipment. From 2005 onwards Scottish Government funding has been used by Bell College for nursing capacity building and curriculum development.

In 2007 Bell College was incorporated into the UWS and established multi-professional clinical skills labs in Kamuzu College of Nursing (KCN) and Malawi College of Health Sciences (MCHS). A permanent site was established in 2010 in the College of Medicine (COM) in Blantyre, operating as a 'hub', with satellite bases at KCN and the three campuses of MCHS. Clinical simulation training has started, including 'training the trainers,' and the programme has been welcomed by a broad range of clinicians including Paediatricians, Anaesthetists, and Obstetricians. It is planned to establish a live-link between the COM in Blantyre and the Hamilton of the UWS
For further information contact Alison McLachlan (allison.mclachlan@uws.ac.uk)

3.9 MaiKhanda Project

This consortium project was developed by The Health Foundation. It was supported by NHS Lothian and the University of Edinburgh, working in conjunction with the MOH and the Reproductive Health Unit (RHU) in Malawi. The Scottish contribution is in staff recruitment. The project is aimed at Quality Improvement (QI) ("top down") and Community Intervention (CI) ("bottom up"), so that a better maternal health service is delivered at health outlets and there is an empowerment at community level to ensure that better care can be accessed.

Three centres, (2 district hospitals and 1 tertiary centre) have been identified for participation in the programme that is aimed at improving outcome for pregnant women and newborn infants. This double-pronged approach is unique and dependent on positive input at the health provider as well as the service use/community levels.

The Scottish contribution is through experienced clinical staff -doctors and midwives- being seconded for 3-6-months to the three sites to introduce and apply QI methodology with a view to improving knowledge, skills and data collection in these centres. In the longer term a successful model can be introduced to other centres across the country.

February 2011 update: Since preparing this paper the role of Edinburgh University in recruiting staff to support the programme has changed, and the Health Foundation are no longer trying to recruit UK staff It proved difficult to secure the release of staff from Scotland for the 3-6 months that the programme required. There were also administrative issues within the programme in Malawi that added to the problem of placing staff in the time

frame available. Malawi Nurse Council regulation required a longer lead in period for nurse registration to practice in Malawi, and became more costly than initially thought.

The combination of the 'top down' and 'bottom up' approaches was innovative and the emphasis on quality assurance was important. The programme is due to end in 2012. The evidence from the RCT evaluation is currently being analysed as to how successful the Quality Improvement investment has been. Limited staff numbers, and lack of midwife mentors has certainly affected the programme in the main Lilongwe Maternity hospital,

Bwaila Hospital where initial outcome improvements appear to be losing ground
For further information please contact Liz Grant (liz.grant@ed.ac.uk)

3.10 Malawi Underprivileged Mothers

This is a Scottish based charity, established by SMP member Linda McDonald, whose work centers around supporting maternal health in Malawi from the proceeds of the publication of three very successful Recipe Books. Over £350K has been raised by the charity over the last 6years and £100K, along with funding from the Hunter Clinton Foundation, the Scottish Television (STV) Malawi Appeal – supported by Lord Jack McConnell, the Children's Investment Foundation, and the Government of Malawi, has been used for the construction of the Ethel Mutharika Maternity Wing.

When the old Bottom Maternity Hospital closed in 2009, it was replaced by both the new Bwaila Hospital, funded from Irish and Norwegian sources, which serves as a low-risk district maternity facility, and the Ethel Mutharika Wing, built with the help of Scottish charitable funds, which is a tertiary referral centre and addresses the needs of women with high-risk pregnancies.

In addition to the construction of the new maternity wing MUMs has contributed to programmes to prevent HIV transmission to newborn babies and to provide support for HIV positive nurses and midwives. Over the last year MUMs work has spread into the rural communities and the charity is now feeding daily over 700 very young and vulnerable children.
For further information please contact Linda McDonald (lindamcd@blueyonder.co.uk)

3.11 Summer 2011 Update — Dr Burnett Lunan

Between 10th and 17th April 2011 Dr Lunan visited a number of contacts involved in the preparation of this Paper and therefore was able to offer an update on the progress of the profiled cameos.

Advanced Life Support in Obstetrics (ALSO) in Scotland
In Zomba, I met with Dr Uwe Graf, Consultant in O&G, who has been conducting an evaluation of the impact of ALSO (Scotland) courses on maternal morbidity. The analysis is not complete but indications to date are positive.

University of St Andrews and University of Edinburgh
At the College of Medicine, I met with Dr S Kamize, Vice-Principal, Dr Moffat Nyirenda, Deputy Director of the Malawi Wellcome Liverpool Trust, Prof Eric Borgstein, Dept of Surgery, and others to discuss the input from the Universities of St Andrews and Edinburgh in Medical Education, Information Technology and training of nurses, midwives, and clinical assistants. The subjects of postgraduate training in O&G and of evaluating a vaccine against Human Papilloma Virus were also addressed.

Chikhwawa Health Initiative (University of Strathclyde)
In Blantyre, Dr Tracy Morse of Scotland Chikhwawa Health Initiative (University of Strathclyde) invited me to visit a training course being held for Health Assistants in Chikhwawa and a village clinic constructed by the Project. I also accompanied her to Nkhoma Hospital, and found good facilities, impressive use of modern technology, and excellent community involvement.

University of West Scotland
I met with Mr Diston Chiweza, Senior Librarian, and visited the almost-completed Library, and specifically the new Skills Laboratory, developed in conjunction with the University of the West of Scotland.

Ninewells Hospital, Dundee
I met Dr Barry Klaassens and Ms Gwen Gordon from Ninewells Hospital, Dundee and visited the almost-completed Accident and Emergency Department where they are assisting with preparations for its opening.

Freedom From Fistula Foundation (FFF)
In Lilongwe, meeting with Mrs Margaret Moyo of the Freedom From Fistula Foundation (FFF) a Scottish-based Charity we discussed the siting of a proposed surgical facility for treatment of fistulas.

Government of Malawi Ministry of Health
I met Dr Charles Mwansambo, former paediatrician, now Principal Secretary to the Ministry of Health, and discussed many aspects of Scottish support for health services in Malawi.

National Organisation of Nurses and Midwives in Malawi
Meeting with Ms Dorothy Ngoma, Executive Director of National Organisation of Nurses and Midwives of Malawi, we discussed training of nurses, midwives, and nurse technicians in the country. At the Bwaila Hospital, I met Ms Rachel McLeod, Senior Midwife, and visited the excellent facilities at the new hospital, which deals with 'low risk' deliveries. At the Ethel Mutharika Maternity Wing, I then met with Dr Andre Kind, Consultant O&G, and visited the new facilities which are for 'high risk' cases only. Both clinicians gratefully acknowledged the significant input from Scotland but expressed concern the no senior obstetrician had been appointed to succeed Dr Kind the next month.

Daeyang Luke Hospital
Finally I spent time with Dr Douglas Lungu, Medical Director of the Daeyang Luke Hospital near Lilongwe, who kindly provided a Foreword to this Paper. I visited the hospital which is part of the CHAM network and was shown computers and hospital beds which had been sent from Scotland. He has ambitious plans to expand the activities of the hospital through nurses' training and possibly a new medical college.

In all, it proved a very useful and productive series of contacts with SMP partners working in the field of Maternal Health.

Section 4: The SMP's contribution

Scott Mahony

This section of the paper details what the SMP has done, since the end of 2009, to try and bring together stakeholders around Scotland-Malawi maternal health engagements in order to raise awareness of the various initiatives, begin a dialogue about best practice, reduce duplication of effort, and move towards a consensus regarding principles, guidelines and priorities.

4.1 Health Expert Group: an online forum

The Health Expert Group (HEG) was created to fulfill two objectives. Firstly, it served as a medium through which the SMP could harness and mobilise the knowledge and experience of its members, to strengthen Scotland-Malawi engagements. Secondly, it was hoped that the group would stimulate debate and generate opinions that could feed into this paper on maternal health.

The SMP's Health Committee intended the group to be a collection of individuals, from both Scotland and Malawi, who had sufficient knowledge and experience to advise on best healthcare practice in lower income countries. In order to find suitable candidates there was an open application process. Applicants were selected to give the group as wide a knowledge base as possible. In particular, it was a key objective to have members who could comment on three core strands: health work force development; clinical delivery and excellence; and determinants of health.

In order that the information produced by the HEG was as relevant as possible, it was necessary that all members had extensive experience of healthcare provision in Malawi. Furthermore, the SMP made special attempts to include Malawian nationals in the discussions: such Malawian input was especially invaluable for discussions around the culture determinants of access to healthcare. As the life of the HEG progressed, more contributors were included, generally on the recommendation of existing members. In the final stages, the group consisted of 17 individuals.

The immediate impact of the group was intended to be a source of advice for those providing ante-, intra- and post-natal care in Malawi. Members of the public could pose questions to the HEG, by emailing the SMP office. To test the functionality of the HEG, the initial questions were devised internally. It was hoped that as people in Malawi became aware of the service, the SMP would simply act as a facilitator, passing communications between the two parties. Unfortunately, interest from the general public was disappointing: however, this may have been due to insufficient or ineffective publicity.

In order to make the answers as accessible and useful as possible, each discussion was consolidated by the SMP office into a single response. The consolidation process aimed to create a short passage detailing, basically, the relevant points expressed during the discussion. The compiled answers were then disseminated and used in the writing of the maternal health paper.

Despite the limited success against the first objective, the HEG did serve an important purpose. The longer-lasting impact of the group was to provide stimulus, and valuable data, for this paper. While many of the discussions were prompted by the SMP, the debate that they generated did often highlight the differences in opinion associated with maternal health development in Malawi.

The HEG was primarily coordinated through a social networking site, Ning. The website format (web 2.0) allowed for questions to be posted on the site, and then easily viewed by HEG members. The website also acted as the main discussion forum.

The use of a website, such as Ning, has several advantages. Using the internet allowed the HEG to be contacted remotely, introducing a high degree of flexibility. The online discussion forum also allowed the HEG members to see and respond to the comments of others.

Interaction and discussions were encouraged: this was facilitated by Ning's privacy features. In order to access the discussions, an individual must have been invited by an existing member of the group. By limiting access to the discussions, the SMP hoped that members would feel free to be open and honest, and explore a variety of topics. It also allowed for peer review and respondents to clarify any remark that they felt was subsequently misunderstood.

However utilising Ning also had disadvantages. The use of technology can create accessibility issues, dependent on people's ability and access. Generally, HEG members seemed to find the particular website simple to navigate. A far greater issue was limitations in internet services. In Malawi, limited bandwidth means the internet can be slow and unreliable, making Ning often difficult to access. Accordingly, HEG members in Malawi were given the option to have all correspondence done through standard emails, but this of course eliminated many of the benefits associated with Ning.

The use of the internet also meant that the SMP lost a degree of control over the debate. This contributed to a longer than intended duration of discussions. Members accessed and addressed questions at their own pace, meaning that progress was often slow, and on occasion stilted. The SMP was limited in its ability to encourage people to participate more quickly. The original intention was to have a new question posted on a weekly basis. However the slow progress of discussions prevented this from happening.

Another closely related problem was that the SMP was often left unsure when a discussion had run its course and everyone who wished to, had contributed. Members were encouraged to post replies clarifying whether they had anything more to add but this proved to not always be possible. Given the connectivity issues and varying availability, some members of the HEG were more actively engaged with the online discussions than others. However, for each question posted replies and comments were submitted by at least one member.

Appendix 1 gives four questions and answers from the HEG's discussion on Ning. All of this data has been included within this paper.

4.2 Maternal health research

Primary research was conducted by Zoe Clements. The research began by sending a questionnaire to approximately 90 individuals and organisations who were members of the SMP and who had previously said they were working within the remit of Scotland-Malawi health engagements. These questionnaires were sent in both paper and email formats and people were encouraged to respond by whichever method was easiest for them. Over 30 responses were received and, of these, approximately 15 individuals agreed to participate in the study. Others were also approached if it was felt that they might have opinions and ideas which might be pertinent.

It was hoped that further data could be generated through focus group discussions. However, it proved difficult to get people together at one time for a group discussion, and therefore it was decided to use telephone and face-to-face interviews to collect information. Participants came from various parts of the UK and Malawi, and were working in a range of ways within maternal health and associated fields.

Eleven interviews were carried out in total, asking questions about the barriers being faced by organisations and individuals. Approximately half were face-to-face interviews and the others were carried out via the telephone. Issues encountered included the geographical dispersion of participants in Scotland/UK, IT constraints in Malawi, and limits of time for both interviewer and interviewed.

Overall, the research found there was a significant amount of positive work being carried out by individuals and groups both in Scotland and Malawi. Many people are working to raise funds for, and raise awareness of, maternal health issues in Malawi. Much of the work is being carried out at a grassroots level with communities in both countries being involved at various points, (e.g. planning, implementing, collating information, and evaluation).

Several issues, suggestions and topics came up repeatedly during the interviewing process. These are summarised below but are further expanded upon elsewhere in the paper:

- Organisations are keen for help to reduce duplication of work – i.e. there is a desire for more information of what others are doing, and what work could be shared
- Cultural issues – language/beliefs/knowledge and awareness of services
- Transport/accessibility – poor roads, or non-existent roads at certain times of the year, making it healthcare access difficult
- Relationship building with individuals and communities can be extremely difficult
- More networking/dialogue required with Government/Ministry of Health in Malawi
- Lack of basic resources such as gloves, blankets, electricity, clean running water, etc

- Emphasis on partnership working has both positive and negatives
- Many positive outcomes reported
- Many changes have been achieved
- A recognition that there is a long way to go and a need to address other areas such nutrition, child health, TB, malaria, and HIV/AIDS to impact positively on maternal health.

4.3 Challenges and successes: input from stakeholders

Prior to the publishing of this paper, the SMP decided to gain further insight from organisations already engaged in maternal health improvement in Malawi by hosting a face to face stakeholder discussion forum. All nine of the organisations featured Section 3 were approached to give short presentations at this forum, discussing their perceptions of the challenges and successes in progressing towards the achievement of MDG 5 in Malawi. These key areas then formed the basis for the stakeholder discussion, all of which has fed into this paper.

The presentations from these nine organisations highlighted eight core challenges (all of which are further elaborated on in the following section under the headings 'human resources', 'quality assurance' and 'health determinants') Coping with the demands of training more students

1. Conflicting messages from the Government of Malawi, particularly over the use of TBAs
2. Shortages of equipment and personnel
3. Perceived undervaluation of staff and the resulting motivational issues
4. Transportation difficulties
5. Limited financial resources
6. Lack of knowledge over good maternal health by expectant mothers and fathers
7. Improving working relationship between national and decentralised government in Malawi to make sure priorities are addressed at all levels

The nine organisations highlighted three core successes to date:

1. The use of information and communication technology to increase teaching standards and consistency for medical staff
2. Increased awareness amongst, and support from, religious and traditional leaders for maternal health issues
3. Increased uptake of sexual health services through a more targeted, youth-friendly approach

Section 5: Analysis: addressing the challenges **Dr Burnett Lunan**

When the Health Committee of the SMP chose Maternal Health as its first major topic for examination it was decided to look at it under three broad headings: human resources, quality assurance and health determinants. This section revisits these three categories to discuss the challenges faced and what is being done between Scotland and Malawi to address them. It has proven necessary to add HIV/AIDS as a new and distinct category.

5.1 Human Resources

It is widely recognised that there are insufficient qualified staff (medical, midwifery, nursing, clinical officers etc) to maintain an effective maternal health service in Malawi. A number of Scottish organisations in collaboration with the Ministry of Health, the Medical College and the College of Health Sciences have established strong links to address these challenges.

Until recently Malawi was only training 20 medical graduates per year, and indeed, of these 20, many were choosing to eschew conventional medical practice in Malawi in favour of better paid options. Many graduates still prefer employment in NGOs or CHAM Hospital because pay and conditions are better than in government hospitals. Some seek training and employment in developed countries depriving Malawi of their services and propping up the health services of rich countries, which can better afford to train more doctors. Once trained as a specialist, private practice can also interfere with an individual doctor's availability for teaching and clinical duties at government hospitals.

To counter these challenges, the Government of Malawi has introduced a programme to increase the annual output of doc-

tors to 100. Because many potential medical students did not have the necessary entry requirements for medicine a 'bridging' course has been successfully introduced to enable entry from state schools into Medical College.

The medical curriculum is currently undergoing radical re-shaping with help from staff at St Andrews University, and interactive programmes from staff at Edinburgh University are further assisting the teaching. While Maternal Health is not an immediate beneficiary of such activity, any improvement in the number and the education of new graduates will benefit maternal health in the longer run.

The programmes being developed with Edinburgh University are adaptable for post-graduate medical and nursing training. A module on Maternal Health is planned and this should be relevant not only for medical students and staff but also for midwives, nurses and clinical officers. It is estimated that Malawi needs 16,000 nurses and midwives: with an estimated current workforce of 4,000 there remains a massive shortfall.

The UWS, initially as Bell College, were closely involved with nurse and midwifery training and curriculum development. Their current involvement is with establishing multi-professional skills labs at the COM, KCN, and the MCHS.

Clinical officers are the backbone of the health service, especially in rural areas. Programmes have been developed between the Ministry of Health and St. Andrews/Dundee universities to support further training of clinical officers but despite encouraging pilot studies, they are still seeking funding to roll-out the initiative.

Training in Obstetric Anaesthesia is part of the programme developed by NHS staff, mainly based in Dundee, but drawing staff from all over Scotland. Safe anaesthesia is a very important component of safe motherhood: the training is mostly for clinical officers, midwives and occasionally doctors.

5.1.1 Post Graduate Training

Attempts are being made to address the chronic shortage of doctors in Malawi by increasing the number of doctors in training at the College of Medicine; however, there remains a serious shortage of specialists in all areas.

In O&G, trainee specialists go to Republic of South Africa (RSA) for 3 years training. The training is good, but expensive to the GOM: moreover while there, the trainees are not providing any service to the people of Malawi. The College of Surgeons in East, Central and Southern Africa (COSECSA) supervises the training of surgeons in Kenya, Ethiopia, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe. Membership of the College is a certificate of competence in General Surgery and takes 2 years. Fellowship is a specialist qualification in General Surgery, Orthopaedics, Neurosurgery, Urology or Plastic Surgery and takes 5 years. Trainees go to neighbouring countries for 'modules' of training which cannot be provided within their own country and candidates all sit the same examination, giving the College's qualification a regional status and authority.

The West African College of Surgeons covers the training of surgeons in 17 West African countries. Within the College there is a Faculty of Obstetrics and Gynaecology as well as Faculties of Anaesthesia, Dental Surgery, Ophthalmology, Otolaryngology (ENT), Radiology and General Surgery. Again there can be movement within the region to ensure adequate training but the examination and qualification is shared. This also ensures that the clinical experience is locally relevant and not that of a developed country.

There is a shortage of experienced teachers and academics in Malawi. Recruiting staff from developed countries can be a mixed blessing if they have no experience of developing countries, especially Africa, and assume access to drugs and equipment which are not available.

Mannequins and electronic teaching aids can help optimise training with limited resources, especially as they can be adapted to the needs of different cadres such as nurses, midwives and clinical officers as well as doctors. However, they are far from the silver bullet: their limitations -reliable electricity and internet access, relevant material etc- must be recognised and planned around.

Midwifery and nursing numbers are seriously deficient: Malawi has only 25% of the midwives and nurses needed for effective maternal healthcare. Huge costs are required of trainee nurses and midwives putting training beyond the reach of most.

CHAM Hospitals, especially if they already have training schools of Midwifery and Nursing, are being encouraged to increase throughput.

Clinical Officers, on whom so much responsibility for the service rests, have very limited opportunity to improve their skills or advance their careers. This is now recognised but there is resistance in some quarters to advancing their cause.
English is the language of medical training, and competence in the language is a requirement for entry into Medicine. In many countries in Africa there are many different languages and English is a compromise. However, this can make Medicine an 'elitist' profession as students without English language skills are precluded. In some countries undergraduate medical education is in the national language which opens medicine to all with ability, and reduces the likelihood of graduates emigrating to richer countries to seek rewards.

5.1.2 Releasing Scottish staff

Recruiting Scottish staff to work in Malawi, in order to address this chronic human resource problem, is not straightforward. Persons being sought for specific functions in maternal health are generally expected to have clinical skills and experience in either midwifery/nursing or obstetrics/gynaecology, rather than basic medical or nursing skills.

Lord Crisp's report on Global Health Partnerships in 2007 emphasised the mutual benefit to NHS staff in the UK, and institutions and health outlets in host resource-poor countries. Although the report was welcomed and endorsed in the UK, there has been only modest uptake of the suggestions made.

A post-membership (postgraduate qualification) obstetrician or a qualified midwife who has the necessary clinical, teaching and administrative skills may well have concerns about the impact of a spell abroad may have on his/her career prospects, training programme, superannuation and mortgage payments, as well as consideration for a partner or family. For the NHS management, there are serious concerns about losing experienced clinicians, difficulty 'back-filling' vacant posts, and missing targets. At a time of national austerity, with worries about reduced funding and fewer jobs these issues are especially acute. The counter argument of the benefits to individuals, and ultimately to the NHS, from such experience abroad is at risk of not being heard.

However there are possible solutions. For more senior clinicians it may be possible to build in sabbatical terms of 3-6 months into their contract so that every few years a term may be spent in a lower-income country. Another possibility is for the 'recently retired' to take up 3 or 6 months at the end of their career, when there are reduced domestic commitments but still a strong willingness to share their knowledge and experience.

Recently the RCOG and VSO have teamed up to offer 3, 6 and 12 month Fellowships for obstetricians who are at a senior stage in their training. This gives the candidate the local support of the VSO organisation in the host country and the reassurance at home that training and career prospects are not adversely affected.

In Scotland there is a huge reservoir of talent willing to offer skills in countries like Malawi if reasonable concerns can be addressed and overcome.

5.2 Quality Assurance

Quality assurance must remain an essential focus for all maternal health initiatives in Malawi if systemic problems are to be addressed, and lasting progress towards MDG 5 is to be made. Between Scotland and Malawi, there are a number of initiatives which are positively impacting on such quality assurance.

The MaiKhanda Project, is run by the Health Foundation, an American NGO, with recruitment of staff coordinated in Scotland by the University of Edinburgh. It is designed to improve maternal health through quality assurance through three core foci. First, by encouraging women at the community level to use antenatal care referral facilities. Second, by encouraging the administration at district level to provide and support basic and emergency facilities in their district. And third, by ensuring the staff in these facilities are sufficiently trained and motivated to offer high quality treatment to the pregnant women. By ensuring that all three components function effectively a better outcome should be achieved.

The ALSO Scotland Programmes have provided training in obstetric emergencies to over 1200 doctors, midwives, clinical officers and nurse/midwives with a view to improving the quality of care offered to women during pregnancy and delivery.

The Nkhoma Safe Motherhood Project functions at district/community level through: education in maternal health; motivation and empowerment of women; training of TBAs to refer women to skilled birth attendants and better record-keeping. These have already shown improved outcomes.

The Waverley Care Programme aims to educate in sexual health and support those affected by HIV/AIDS. The benefits on maternal health are indirect, by preventing unwanted pregnancy and minimising the risk of HIV infection or transmission.

The University of Strathclyde programme in Chikhwawa has also been involved in education of women, training of TBAs to refer women and improving accommodation for medical and nursing staff. Pilot studies have shown a significant impact on outcome.

5.3 Determinants of Health

As has been discussed, maternal health has both direct and indirect determinants. It is essential that the indirect determinants -such as hygiene, water quality, nutrition and education are not forgotten in the drive to address the more overt direct determinants. There has been excellent work between Scotland and Malawi in this area.

The University of Strathclyde's Chikwawa Health Initiative started as an environmental health programme looking at waterborne diseases but is now majorly involved in maternal health. Good living accommodation provided within the project is an inducement to the staff to work in the local facilities. Improved outpatient buildings were erected with staff and fundraising from Glasgow District Council. Secure clean water supplies, mosquito nets, photovoltaic electricity and radio/mobile phone communication have all been taken forward in this programme with indirect benefit to maternal health. Also bicycle-ambulances enable sick or labouring women to be transferred safely and promptly to delivery facilities.

Education of girls and young women has been shown to influence a mother's chance of surviving pregnancy: each year of education reduces the risk of mortality by 5%. Linkages between Scottish and Malawian schools, which improve educational opportunities and achievements therefore contribute to a better pregnancy outcome.

Good nutrition of girls and young women improves general but feeding girls is sometimes given lower priority than feeding boys. Sadly, mothers are often the last to feed in a family. Good nutrition is important but unfortunately discouraged in some cultures in the fear that bigger babies will obstruct labour.

5.4 HIV/AIDS

HIV/AIDS was not one of the original three strands for the HEG to focus on. However, it has been included here as, with 12% of adults in Malawi are infected by HIV/AIDS and almost half a million women of reproductive age being infected, it is impossible to meaningfully discuss maternal health in Malawi without considering the impact of HIV/AIDS.

There are regional variations in the incidence among pregnant women – over 20% in the south of the country but around 14% in the north and central regions. In some antenatal clinics over 30% of the women are infected with HIV. Maternal HIV infection has serious implications for both mother and baby, and proven interventions with ARV (anti-viral) drugs will reduce the risk of transmission to the newborn and improve prospects for the mother.

Many women are unaware of their HIV status and may choose not to know because of concerns about stigmatisation and social isolation. While ARV therapy is often available, it is frequently not accessed due to such fears.

HIV infection in pregnancy is associated with anaemia, post-partum haemorrhage, puerperal sepsis and makes conditions such as tuberculosis (TB), malaria and other infections much more serious. In fact TB is frequently regarded as a 'surrogate' for HIV/AIDS because it does not carry the same stigma as the underlying infection.

HIV/AIDS infection in South Africa is higher than most parts of Malawi and carefully conducted studies there have shown that untreated HIV infection can double the maternal mortality rate in a community. The implication of that is that high levels of HIV infection will more than negate any improvement in obstetric and midwifery care.

In seeking ways of decreasing maternal mortality it is essential that pregnant women are offered counseling, tested and treated to reduce the risk of mother to child transmission and to improve prospects of accessing effective treatment.

Section 6: Continued barriers to success in Malawi — Dr Burnett Lunan

In discussions with many individuals and groups working in Malawi a number of issues arise, some generic, others specific to a project. Projects need the support of the Malawian community (from villages to professionals, politicians and academics) and the funding group in Scotland (from church or school to government). Difficult agendas may have to be reconciled to avoid frustration at either end. If aid comes too readily, or from too many sources, a culture of dependency can arise – an expectation that only others and outside funding can overcome the problem.

Stewardship of funds – getting value for money – is in everybody's best interest but can be problematic, short-changing both ends. Donors need to be sensitive to local cultural factors – how decisions are taken, what authority is respected etc. Local factors such as the prevalence of HIV/AIDS, malaria, transport, poverty, draughts and floods may not be fully appreciated in Scotland as an explanation for delays in implementation.

There is also a danger of saying what the donor wants to hear. And donor agencies may be tempted to exaggerate their achievements to ensure that funding is maintained. The dynamics of aid are complex. The corollary is also true – too much supervision, too many reports, too many boxes to tick can stifle initiative and frustrate those on the ground.

Generic barriers to achieving success are self-evident. Poverty is widespread and discourages women from leaving their familiar environment so that less expense is incurred. In addition to shortage of staff, facilities may be restricted – e.g. access to essential drugs, anaesthesia, blood transfusion, risk of being infected etc. Such conditions discourage women from going to hospital when problems arise and if they are going to die, they would rather die at home.

Radical revision of course curriculum for nurses, midwives and doctors cannot be dictated by outside advisers. A lot of support and direction has been offered but ultimately implementation and evaluation of the changes must be locally driven. If Malawian academics and tutors are to move beyond the 'comfort zone' of the old curriculum there has to be a commitment to change.

Many training courses are run to improve skills – obstetric, anaesthesic , basic emergency care, advanced emergency obstetric care – trainers are trained, mannequins and equipment are left behind and 'ownership' of these courses should pass to local administrators and trainers who will then undertake their own training programmes.

The MOH and different NGO groups e.g. UNICEF, DfID, WHO, ALSO may run similar although not identical courses in say obstetric emergencies attracting trained staff to one, two or more courses with generous per diem allowances. There is a risk of individuals attending as many course as possible, and consequently being absent from essential labour ward duties. There needs to be co-ordination and supervision at the GOM and District Health Authority levels to avoid duplication of effort, to ensure cross-sectoral co-operation, and to ensure that programmes are properly evaluated.

'Attitude' is an issue in the clinical environment – how doctors relate to nurses and midwives, - how nurses and midwives relate to clinical officers – and how they all relate to TBAs, for example. A hierarchal attitude to colleagues makes teamwork difficult or impossible. Moreover, how respectfully staff address and treat patients can influence how well-disposed or otherwise patients may be to attend health facilities.

Better co-ordination of effort in Scotland needs to be addressed. A reluctance on the part of funding bodies, particularly the SG, to fund capital projects means that construction of essential buildings depends on finding alternative funding.

Short-term (up to 3 weeks) visits by Scottish 'experts' are generally easily arranged but lengthier assignments may be more difficult to set up. Many projects that seek three to twelve month commitments of middle grade and senior staff have experienced difficulties because of concerns about training requirements, superannuation and impact on career advancement. These barriers need to be addressed in Scotland.

Section 7: The Way Forward

Dr Burnett Lunan

There is an enormous amount of good will in Scotland towards Malawi and a wish to help Malawi whenever possible, but the help must be appropriate.

We have to build on the successes of the Scotland Malawi Partnership in Maternal Health – the replacement of the Bottom Hospital in Lilongwe, the many successful teaching and training programmes in many districts as well as Blantyre and Lilongwe, and the community and public health projects throughout the country which are described in the cameos. There is much to be proud of.

In the past there have been examples of inappropriate aid such as discarded NHS beds, incubators, electronic equipment, old computers for example, which did not work or could not be serviced or maintained. Medicines which are about to time-expire or are neither needed nor wanted should not be collected and sent. If equipment is available for sending make sure there is a need for it and that it can be serviced locally.

Projects have to be developed in response to requests from Malawi, with permission and support at the correct level. Good stewardship – making sure that funds are correctly used and accounted for – is essential. A local coordinator to ensure that the programme and timetable are adhered to can be very useful.

To ensure sustainability of a programme, training trainers is essential and leaving teaching equipment such as mannequins is valuable if local courses are expected to run. (This has been the approach adopted by Scottish groups involved in health related programmes) Assuming local ownership of the programme and accepting responsibility for disseminating the teaching is crucial to the success of the programme.

In the Health area, as far as possible, teaching programmes should be adaptable to different cadres – doctors, nurses, midwives and clinical officers – and should support policies which foster good working relationships between the different professional categories.

Good collaboration between groups in Scotland is important to avoid replication of effort but it is also important to establish that there is not duplication or overlap in Malawi. It is counterproductive if similar topics such as obstetrics emergencies are being covered by teams from different donor agencies.

Post-graduate training in Obstetrics and Gynaecology for Malawians is mainly conducted in the Republic of South Africa (RSA) because facilities and resources within country are limited. (e.g. radical surgery, endocrinology, perinatal medicine) The benefit of maximising training within Malawi is that it will improve standards of practice and trainees will be spending some of their training time in Malawi. Surgeons have addressed the problem of postgraduate training by setting up Regional Colleges of Surgeons – one in West Africa (WACS) based in Nigeria, and one in East Central Africa and Southern Africa (COSECSA) based in Kenya. The West African College has a Faculty of O&G which supervises training in the specialty and awards qualifications which are recognised regionally. COSECSA does not award qualifications in O&G but may not be averse to this if O&G specialists in the region were to push for it. It would appear a simpler solution to use the COSECSA structure and expertise than to establish a separate O&G College. In addition to the benefit in terms of trainees working in their own country or region it would ensure that clinical experience gained was locally relevant.

Ultimately addressing challenges in Malawi must be achieved by Malawians. Of course sustainability of programmes has to be considered but ultimately Malawians must say like Obama 'Yes we can.' In doing so priorities must be established, ownership assumed, resources found and goals achieved. The real solutions will come from inside, not outside. Donors should be helping to write themselves out of the script!

From the Scottish end there is a need to recognise that conditions in Malawi are different - problems with communication, transport, availability of drugs, blood transfusions, levels of literacy, attitudes to sex and sexuality, prevalence of infections such as HIV/AIDS and tuberculosis as well as stewardship of funds. There is no single or simple answer.

There is a need to clarify the commitment of Scottish staff going to Malawi on medium-term assignments. In the present economic climate NHS Health Boards may be unwilling to lose experienced staff, especially if back-filled by less experienced staff: candidates may be anxious about losing out on National Insurance and superannuation payments, may have mortgages to consider and may feel disadvantaged in promotion prospects; and Royal Colleges may be unwilling to recognise experience abroad as relevant to specialty training. However senior staff may be eligible for sabbaticals or may be available if retired and in good health, and this too is being pursued.

Epilogue

Dr Burnett Lunan

Since starting this exercise much has happened. Some projects have been concluded, others are still at an early stage but most are continuing strongly. I believe that most participants have enjoyed and benefitted from the opportunity to discuss successes and challenges through the open meetings, the web-based discussion forum, and frequent exchanges of emails to build up a comprehensive picture of what is really happening in both Scotland and Malawi. The Paper is an attempt to give expression to those views and experiences from both countries, but is by no means comprehensive or complete. As existing programmes continue and new ones come on board, the picture will change but it is hoped that the Paper will provide a reference point in this process. By sharing experience, individuals and groups can avoid pitfalls, develop positive strategies, and ensure best outcome. The recent report from Edinburgh University (October 2010) has demonstrated that the relatively modest investment from the Scottish Government has resulted in a ten-fold benefit in Malawi through grassroots and institutional support. The report from the independent Chatham House (March 2011) has endorsed the 'bottom up' approach of the Scotland Malawi Partnership, with co-operation at community level, as a model which should be copied by other donor agencies. Maternal Health remains a blight on global health outcomes and an indictment of a global attitude to women's issues, and the relevant MDG (No5) shows least progress internationally. Malawi has one of the highest maternal mortality rates in the world but efforts are being made to address this. The contribution being made by individuals and groups from Scotland is helping in that process. On a personal note I would like to thank Isabel Bruce, David Hope Jones, the Members of the Health Committee and the Health Expert Group and all those contributors, in Malawi and Scotland, without whom this task would have been impossible.

Appendix 1
Examples of HEG questions, answers and discussions on Ning

HEG Question 1: What are the most significant differences in maternal health between the UK and Malawi? Which one service/strategy/policy would you prioritise and why?

It is important to remember that nearly all the causes of women dying in pregnancy in Malawi today are the same causes of maternal death in the UK 70 years ago. The main differences between the UK and Malawi are:

- Family planning and safe abortion procedures which are available in the UK
- The UK has more sanitary delivery environments
- The ante-natal care and detection of high risk women, which is available for all women irrespective of where they live in the UK or their social status
- Access of all women in the UK to skilled health care workers for delivery, even if they have failed to attend ante-natal care
- Availability of high level emergency multi-disciplinary care for women in UK who have complications during pregnancy and/or delivery
- The lack of essential anaesthetic drugs and equipment for women who require surgery for, or after, delivery in Malawi
- Shortages of essential drugs including oxytocin (a drug that helps prevent hemorrhage in the postnatal period) and antibiotics in Malawi
- The wide spread availability of blood and component therapy for women who require it in the UK
- Shortages of theatre and monitoring equipment in Malawi - including surgical and anaesthetic equipment required to manage obstetric emergencies
- Insufficient numbers of Malawian midwives to provide detailed post-operative observations in critically ill women
- Lack of continuing professional development training for all Malawian midwives, as well as Malawian nurses in general
- The standing of midwives in society is also an important issue. Malawian midwives may be less valued by society than their British counterparts, leading to low morale and poor performance
- Malawian socio-cultural beliefs which influence when and how intervention is sought by mothers. Different parts of Malawi have their own beliefs complicating a standard policy response

The group felt that the key to improving maternal health in Malawi was to improve the provision of care for those women who reached hospital. To achieve this, the group identified the goals of increasing the availability of essential drugs, blood for transfusion, and of ongoing training for midwives clinical officers and doctors.

HEG Question 2:
The Millennium Goal Number 5 regarding maternal mortality is looking as though it will not achieve its target of reducing maternal deaths by 75% by 2015. What are your opinions on why this is and how you would address this with particular regard to Malawi?

If the Millennium Development Goal is to be met, the level of investment in maternal health services needs to be increased. With further investment, the quality of service can be improved through more intensive, professional training for midwives and clinical workers. Investment would also alleviate the shortages of staff, essential drugs and equipment in hospitals and district health centres. Establishing adequate and consistent supplies of drugs and equipment is essential, not only to save lives directly, but also to improve morale within the sector.

The Millennium Development Goal requires the promotion of births being attended by skilled health care professionals. Malawi, however, has a critical shortage in these personnel. Traditional Birth Attendants (TBAs) have previously been the major provider of maternity services in Malawi, but they are often untrained and their role is controversial. While the Government policy is to phase out TBAs, it remains a fact that until the number of professional staff can be increased, for many women the TBAs are the only option. Increasing investment is a challenge to a country that has very limited financial resources. In order to increase investment, and make sure that it is used in the appropriate way, maternal health has to become a political priority - at every level - involving senior politicians, village or community leaders, and heads of households. Community education programmes are needed to help all in the community to understand what the dangers of childbirth are, and how these can be reduced.

HEG Question 3:
If you could offer one piece of advice to a pregnant Malawian woman living in Malawi, to promote good maternal health, what would it be?
There are a number of steps that an expectant Malawian mother can take to increase her chances of a positive outcome:
• Be aware of child spacing/ family planning issues
• Identify a skilled birth attendant, attend her antenatally, and have arrangements in place for referral should the need arise
• Be aware of maternal services and make use of them
• Be aware of complications and seek help promptly
• Due to problems of transport, have contingency plans e.g. going to hospital early and use the antenatal guardian quarters in the hospitals or health centres.

Mothers must be encouraged to seek knowledge and plan through their pregnancy. Of course many of these activities may be hindered if a woman has little say in household decisions. So improving maternal health must go hand in hand with empowering women to be able to make choices and take action on their own.

HEG Question 4:
What impact has the phasing out of traditional birth attendants had on maternal health?
In a bid to improve the provision of maternal care, the Malawian government has begun to actively discourage the use of traditional birth attendants (TBAs). Instead of using TBAs, women are being advised to make use of the rural and urban clinics for antenatal visits and childbirth. While far better trained than TBAs, the severe shortage of midwives, especially in rural areas, is very restrictive to their ability to provide care. Community midwives and nurse training colleges are involved in training more midwives, however, this process takes time. It is certain that a complete discontinuation of TBAs would leave some expectant mothers with no birthing assistance at all. So, even when discouraged, many women may have no choice but to seek the services of TBAs during their pregnancy and childbirth.

The government, by trying to signal the end of the TBAs, risks driving the practice underground. Strong cultural beliefs and necessity will continue to allow TBAs to practise, but the government's stance may only serve to make TBAs more reluctant to seek assistance in instances where there are complications.

If TBAs are to be phased out, there must be a process of transition, so that there is not a sudden fall in maternal health provision. The International Confederation of Midwives suggests that traditional birth attendants should be phased out in a three pronged approach; registration, up-skilling, and the establishment of local birth centres. This process would mean that there is a smooth transition from women using the services of TBAs to the desired conclusion of all women being attended by skilled, professionally trained midwives.

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